

THE LEPIDOPTERA OF BROKEN HILL, NEW SOUTH WALES.
PART I.

By OSWALD B. LOWER, F.Z.S., F.E.S., etc.

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The Broken Hill district is a dry belt of country situated about 334 miles from Adelaide, the nearest coastal port being Port Pirie, about 250 miles distant. The rainfall has an average of about 8 inches. The surface of the district consists of low ranges of hills, with intervening sandy alluvial plains, the rocks exposed being largely composed of an ancient system of limestone and boulder beds, and although the district has been characterized as a desert, the appellation is a misnomer, as during a good rainy season the herbage flourishes to an astonishing degree of prolific activity.

The flora is largely composed of representatives of the *Cruciferae* (*Blennodia*, etc.), *Malvaceae* (*Lavatera*, *Gomphrena*, etc.), *Myoporinae* (*Eremophila*), *Sapindaceae* (*Dodonoea*), *Salsolaceae* (*Kochia*, *Bassia*), *Compositae* (*Helichrysum*), *Leguminosae* (*Cassia*, *Acacia*), *Myrtaceae*, the mulga (*Acacia aneura*), and gum, *Eucalyptus rostrata*, being predominant in the area under notice, whilst the generic names in parentheses indicate those more commonly met with.

The climate during the summer period, *i.e.*, November to February, is rather trying, but the remainder of the year is mild and bracing, the mean temperature being, according to J. B. Jacquet, about 65·5° F.

The insect fauna is tolerably well represented; amongst the Neuroptera, Orthoptera, and Myrmelionidae I have secured several novelties. The Coleoptera are mostly represented by members of the *Carabidae*, *Tenebrionidae*, *Buprestidae*, *Curculionidae*, and *Scarabaeidae*. The Lepidoptera of the district is particularly interesting, affording, as it does, an insight into the peculiar, and in many instances probably locally endemic, species of this hitherto unexplored region. It has produced some startling discoveries, not only in the large percentage of new species, but in the geographical distribution of others well known. A large proportion of the species herein enumerated are to the best of my knowledge endemic of the district, and the number of new genera and species adduce an important aspect as to what the inland portion of the continent may be expected to yield during the course of further search. One noticeable characteristic

is the entire absence of the *Hesperiadae*, the absence of *Cladium* no doubt being responsible for such. Another notable peculiarity is the large number of single stragglers which I secured from time to time; nearly all the world-wide species have been taken here, introduced no doubt through agency of merchandise which finds its way here from every portion of the globe. Especially is this applicable to *Deilephila euphorbiae*, a living specimen which Mr. J. Fairhead secured in the mail-room of our local post office. The principal area from which the collection has been made does not extend beyond five miles of the town itself, and doubtless many more interesting species remain yet to be discovered, especially along the river district.

In forming the collection I encountered at once the difficulty of having no scrub or undergrowth within fifty miles of the town, and the continuous devastation of the remaining scrub and low herbage by grazing, etc., and the removal of street trees—mostly *Eucalypti*—have added to the difficulties of collecting. A large proportion of those enumerated were taken at light, but the advent of the electric street lights, with the lamps fully 15 to 20 feet from the ground, have not made the acquisition of specimens any easier. The result of my labours, however, has been more than compensated by the discovery of so many new forms. I think I can claim the unique distinction of having compiled the first authentic list of species distributed in Central Australia, and although I have the advantage of my critics by being on the spot, I sincerely trust that those who in due course add to the catalogue will find nothing to cavil at in its contents, but prove its utility to be of such importance as to justify its publication. The types of the new species are in my collection.

Family AMATIDAE.

The name *Amata*, Fab., having priority over *Syntomis*, Ochs., the name of the family is altered accordingly. The three undermentioned species of the family are only stragglers.

1. AMATA XANTHOSOMA, Turn.

Two specimens near Tibooburra, in January.

2. AMATA CLEMENTSI, Hmps.

One abraded specimen at light, in February.

3. AMATA MAGISTRI, Turn.

Four specimens, in January.

Family ARCTIADAE.

Subfamily NOLINAE.

4. CELAMA ALBALIS, Wlk.

Four specimens, in October.

5. ROESELIA LUGENS, Wlk.

Taken occasionally during September and March, at light.

6. ZIA TACTALIS, Wlk.

Three specimens, in August.

7. CTENOSIA INFUSCATA, Low.

Two specimens, in April.

8. SCOLIACMA BICOLOR, Bdv.

One specimen from Wilcannia, without date.

9. ILEMA REPLANA, Lewin.

One specimen, in March.

10. HALONE SEJUNCTA, Feld.

Taken occasionally in October and November.

11. HALONE SINUATA, Willgrn.

Not uncommon in July and August.

12. CAPRIMIMA PROCRENA, Meyr.

Four specimens, in November.

13. POLIODULE XANTHODELTA, Low.

Generally common in September, October, and November. I have not yet succeeded in discovering the female, which is probably apterous. The generic name is misprinted *Poliodula* in Hampson's Catalogue.

14. XANTHODULE OMBROPHANES, Meyr.

Rather common in September and October. I also take the form *inquinata*, Lucas, and have received it commonly from Wompah, on the Queensland border.

15. XANTHODULE SEMIOCHREA, Butl.

Two specimens, in November.

16. ASURA LYDIA, Don.·

Five specimens, taken at Tarrawingee in March and April. The specimens are dwarfed, with the medial black band of hindwings absent.

17. THALLARCHA ALBICOLLIS, Feld.

Taken occasionally, at light, during November.

18. THALLARCHA SPARSANA, Wlk.

Not uncommon, at light, during September and October. The specimens taken here are larger than those from Queensland, and with the hindwings more orange.

19. THALLARCHA JOCULARIS, Rosenst.

Three specimens, at light, in March.

20. THALLARCHA RHAPTOPHORA, n. sp.

♂, 22 mm. Head and palpi yellow. Thorax fuscous, patagia pale-yellow. Antennae fuscous. Legs fuscous, posterior pair pale-yellow. Abdomen pale-yellow, somewhat infuscated beneath in middle. Forewings elongate-triangular, costa hardly arched, termen obliquely rounded; white, with blackish markings; a small spot at base of wing; a narrow outwardly oblique dentate fascia, from costa at one-sixth to fold; a round spot just above dorsum at one-fifth; a double dentate fine line from before middle of costa to middle of dorsum, followed on its posterior edge by an interrupted narrow dentate shade, most prominent on costa; a twice outwardly sinuate, somewhat dot-like line, from costa at about four-fifths to dorsum before anal angle, more or less interrupted on lower third; an elongate mark above middle, between dot-like line and shade, indented on posterior edge; a rather thick shade, from costa near apex, where it is dilated, to anal angle, twice excurved at and above middle, both anteriorly and posteriorly, and sometimes interrupted above anal angle; a row of round dots along termen; cilia dark-fuscous, with an ochreous tooth above middle and anal angle. Hindwings yellow; an elongate fuscous discal spot, above and beyond middle; a moderate fuscous apical patch extending to middle of termen, thence continued as a fine line to near anal angle; cilia pale-yellow.

Between *isophragma*, Meyr, and *jocularis*, Rosenst.

Two specimens, taken in November.

21. THALLARCHA CATASTICTA, n. sp.

♂, 18 mm. Head white. Palpi fuscous, internally whitish at base. Thorax fuscous, patagia white. Antennae

fuscous. Legs fuscous, posterior pair ochreous-yellow. Abdomen yellowish-orange, deeper orange beneath. Forewings very elongate triangular, costa hardly arched, termen obliquely rounded; white, with fuscous markings; a small spot at base of wing: three more or less confluent spots, forming a narrow outwardly oblique band, from costa at about one-fifth to middle of wing; a small spot just above dorsum, and anterior to termination of band; a narrow dentate fascia from middle of costa to middle of dorsum, sharply sinuate inwards above middle; a twice outwardly sinuate narrow line from five-sixths of costa to just before anal angle, becoming interrupted and dot-like on lower third; an elongate discal spot above middle, between median and last line, but nearer the latter; a short oblique dash from costa near apex, nearly reaching first sinuation of last line; a row of hind-marginal dots; cilia pale-yellow. Hindwings very pale-yellow; a fuscous elongate discal spot above and beyond middle; a pale-fuscous apical patch, obscurely continued along termen to middle; cilia pale-yellow.

One specimen, in November. I have seen a specimen from Birchip, Victoria.

22. CASTULO GRATIOSA, Wlk.

Three specimens, in October; these appear to fluctuate between *gratiosa*, Wlk., and *zonophanes*, Meyr., the median band of forewings being nearly filled in with fuscous, and the post-medial band as broad as in *zonophanes*. Perhaps a further series may indicate a new species.

23. CASTULO LAETA, Wlk.

A single specimen, of the form *xanthomelas*, Low., taken in November; the bands of forewings are much broader than the type, and strikingly approach *shepherdii*, Newm.

Subfamily ARCTIANAE.

24. ARDICES GLATIGNYI, Le Guill.

Taken occasionally, in November.

25. CREMNOPHORA ANGASI, Wlk.

Not uncommon in the spring and in March.

26. UTETHEISA PULCHELLA, Linn.

Common from September to April.

Subfamily AGARISTIDAE.

27. CRURIA DONOVANI, Bdv.

I have a single battered specimen, taken at Balaclava, near Broken Hill, in January. As some species of this group are said to feed on *Loranthus*, and as this plant is abundant here, it is curious that the family is not more freely represented.

NOCTUINA.

This group is well represented here, and I possess several species which are probably new, but not in a fit condition for description. The genera *Omphaletis* and *Ariathisa* are most abundant, but nearly every family is represented.

Subfamily AGROTINAE.

28. NEOCLEPTRIA PUNCTIFERA, Wlk.

Tolerably common in October and November.

29. CHLORIDEA OBSOLETA, Fab.

Common from August to December, also in April. This species has stood for years as *armigera*, Hüb.

30. MELICEPTRIA MESOLEUCA, Low.

Five specimens, in March.

31. MELICEPTRIA PALLIDA, Butl.

Two specimens, in March.

32. BUCIARIA BIPARTITA, Wlk.

Three specimens, March and April.

33. EUXOA RADIANS, Gn.

Very common in August to November, and again from March to May.

EUXOA INFUSA, Bdv.

Not uncommon in September and October.

35. EUXOA PORPHYRICOLLIS, Gn.

Taken occasionally in March.

36. EUXOA RECLUSA, Wlk.

Taken at rare intervals, in March.

37. AGROTIS COMPTA, Wlk.

Several specimens, September and October.

38. *AGROTIS SPINA*, Gn.

Several specimens, September and October.

39. *PROTEUXOA MNIODES*, Low.

A rare species, two specimens in November.

40. *PROPATRIA MUNDOIDES*, Low.

Rather common from September to November.

41. *ECTOPATRIA ASPERA*, Wlk.

Taken occasionally in October.

42. *POLIA CONSANGUIS*, Gn.

Not uncommon in October.

43. *PERSECTANIA EWINGII*, Westw.

Taken occasionally in October.

44. *DASYGASTER EUTHERMA*, Low.

Five specimens, in March.

45. *CIRPHIS UDA*, Gn.

Two specimens, in March.

46. *CIRPHIS LEUCOSTA*, Low.

One abraded specimen, in May.

47. *CIRPHIS LOREYI*, Dup.

Not uncommon in March and April.

48. *CIRPHIS CILIATA*, Wlk.

Two specimens, in October.

49. *CIRPHIS UNIPUNCTA*, Haw.

Tolerably common in April and May.

Subfamily CUCULLIANAE.

50. *EUMICHTHIS SEPULTRIX*, Gn.

Five specimens, in October.

51. *EUMICHTHIS SALIARIS*, Gn.

Rather uncommon, in October.

52. *PERIPYRA SANGUINIPUNCTA*, Gn.

One specimen, in October.

53. *COSMODES ELEGANS*, Don.

Not uncommon during September and October.

54. *SPODOPTERA MAURITIA*, Bdv.

Four specimens, in October.

55. *LAPHYGMA EXEMPTA*, Wlk.

Two specimens, in November.

56. *LAPHYGMA EXIGUA*, Hüb.

Very common, especially at light, August to November.

57. *PROMETOPUS HOROLOGA*, Meyr.

Tolerably common in March.

58. *EREMOCHROA MACROPA*, Low.

Not uncommon in March and April, the male preponderating.

59. *EREMOCHROA PARADESMA*, Low.

Several specimens, in May.

60. *EREMOCHROA ALPHITIAS*, Meyr.

Several specimens, in April.

61. *EREMOCHROA THERMIDORA*, Hmpsii.

A scarce species, two specimens in September.

62. *MICROPIA RHODOCENTRA*, Low.

A scarce species, two specimens in April.

63. *OMPHALETIS FLORESCENS*, Wlk.

An abundant species, September to November and March.

64. *OMPHALETIS EXUNDANS*, Gn.

One specimen, in May.

65. *OMPHALETIS HELIOSEMA*, Low.

Very common in September, October, and March.

66. *OMPHALETIS NUNA*, Gn.

Rather common in March and April.

67. *OMPHALETIS MELODORA*, Low.

Common during October and November, and again in April.

68. *OMPHALETIS METANEURA*, Low.

Not uncommon in March and April.

69. *OMPHALETIS SARCOMORPHA*, Low.

A scarce species; two specimens, in April.

70. *OMPHALETIS PETRODORA*, Low.

Two specimens, in March.

71. *OMPHALETIS* (?) *ACONTOURA*, n. sp.

♀, 30 mm. Head, palpi, antennae, and thorax smoky-brown, palpi dull-ochreous beneath, abdomen rather dark-fuscous. Legs fuscous, mixed with whitish. Forewings elongate-triangular, termen gently rounded; smoky-brown, with black markings; a thick streak along submedian fold, from near base to before middle, posteriorly attenuated; a thick similar streak in middle of cell throughout; a row of black dots along termen; cilia smoky-brown. Hindwings with termen rounded, faintly waved; light-fuscous; cilia grey, with a fuscous sub-basal line.

In the absence of the male, the generic location is uncertain.

One specimen, in October, at light.

72. *OMPHALETIS SPODOCHROA*, n. sp.

♂, ♀; 24, 28 mm. Head and antennae fuscous, face whitish-ochreous. Palpi ochreous-whitish, second joint infuscated laterally. Thorax ashy-grey-whitish, anteriorly with a narrow fuscous band, collar rufous. Abdomen greyish-ochreous. Legs greyish-white, tarsi fuscous, banded with ochreous. Forewings elongate-triangular, termen gently rounded; ashy-grey-whitish; all lines obsolete; orbicular small, reddish-ochreous; reniform white, moderate, edged on either side with reddish-ferruginous, and with a small blackish shade on lower lobe; an obscure reddish sub-basal median spot; three equidistant black dots on costa, first close to base, from which emerge faint indications of sub-basal line, second at one-quarter; third at about middle; faint indications of a waved fuscous subterminal line; a row of fuscous-ferruginous dots along termen; cilia dark-fuscous; terminal half greyish-ochreous.

Near *sarcomorpha*, Low.

Seven specimens, in March.

73. *ARIATHISA COELENOPTERA*, n. sp.

♂, ♀, 34 mm. Head and thorax blackish, slightly irrorated with whitish. Palpi ochreous-whitish, base of second

and upper edge of terminal joint black. Antennae fuscous. Abdomen grey, beneath infuscated. Legs fuscous, banded with ochreous-white. Forewings elongate-triangular, termen rounded, faintly waved; dark-fuscous, mixed with black, and sparsely irrorated with whitish; sub-basal line black, hardly traceable; antemedial line waved, black, double, from costa at one-quarter to dorsum at one-third; orbicular white; reniform large, pale-yellow, with an irregular blackish patch in lower lobe; postmedian line dentate, becoming double on lower half; subterminal line waved, ochreous; space between postmedian and subterminal very dark-fuscous, with veins outlined in black on space; six or seven ochreous-white costal dots, first at commencement of antemedial line, last on middle of dark-fuscous groundcolour, one above reniform largest; a waved black line along termen, preceded by a row of ochreous interneural spots; cilia fuscous, basal half ochreous, with a row of black median spots at extremities of veins. Hindwings with termen rounded, faintly waved; white, becoming infuscated on apical third; a fuscous discal lunule; a fuscous waved line along termen; cilia white, mixed with fuscous at apex.

Nearest *cornuta*, Low.

Five specimens, in March; also from Pinnaroo, South Australia.

74. *ARIATHISA ENDESMA*, Low.

Several specimens, November and April.

75. *ARIATHISA CORNUTA*, Low.

One specimen, in March.

76. *ARIATHISA EUCHROA*, Low.

Four specimens, in March.

77. *ARIATHISA ANGASI*, Feld.

Five specimens, in April.

78. *ARIATHISA TORTISIGNA*, Wlk.

Three specimens, in March and April.

79. *ARIATHISA CHRYSOSPILA*, Low.

Not uncommon in March and April.

80. *ARIATHISA PARAGYPSA*, Low.

Two specimens, in April.

81. *ARIATHISA GYPSINA*, Low.

Fourteen specimens, in March and April.

82. *ARIATHISA PARATORNA*, Low.
Not uncommon in March.

83. *ARIATHISA ETONIANA*, Low.
Taken occasionally in March.

84. *ARIATHISA HYDRAECIOIDES*, Gn.
Nineteen specimens, in March and April.

85. *ARIATHISA MICROSPILA*, Low.
Rather common during April and May.

86. *ARIATHISA ATMOSCOPA*, Low.
A rare species; three specimens, in April.

87. *ARIATHISA CONFINIS*, Wlk.
Not uncommon in March.

88. *ARIATHISA CAPULARIS*, Gn.
Rather a scarce species, taken in March.

89. *ARIATHISA ATRA*, Gn.
Five specimens, in March.

90. *ARIATHISA MICRODES*, Low.
A winter species, rather common from April to July.

91. *ARIATHISA HETEROGAMA*, Low.
See page 374.

92. *ARIATHISA MONOCHROA*, Low.
Two poor specimens, in May.

93. *ARIATHISA ADELPHODES*, Low.
Taken occasionally in April.

94. *ARIATHISA INTERFERENS*, Wlk.
One imperfect specimen, in March.

95. *ARIATHISA FLEXIRENA*, Wlk.
Two specimens, in October.

96. *HYPOPERIGEA TONSA*, Gn.
One specimen, in March, somewhat worn.

97. *PROXENUS TENUIS*, Butl.
Common during September and November.

98. *PHRAGMATIPHILA TRUNCATA*, Wlk.

A single specimen, taken in March.

99. *CHASMINA PULCHRA*, Wlk.

A single specimen, in October.

Subfamily ERASTRIANAE.

100. *EUBLEMMA ANACHORESIS*, Wllgrn.

Two specimens, in October.

101. *EUBLEMMA COCHYLIOIDES*, Gn.

Not uncommon in September.

102. *EUBLEMMA RIVULA*, Moore.

Common from August to November.

103. *EUBLEMMA DUBIA*, Butl.

Common at light, in October.

104. *EUSTROTIA AMORPHA*, Butl.

Three specimens, in October.

105. *EUSTROTIA RITSEMAE*, Snell.

Two specimens (worn), in October.

106. *EULOCASTRA EURYNIPHA*, Turn.

Tolerably common during October and November.

107. *TARACHE NIVIPICTA*, Butl.

Four specimens, in October.

108. *TARACHE HIEROGLYPHICA*, Low.

Rather common in October and November.

109. *TARACHE CLERANA*, Low.

Several specimens, in October.

Subfamily EUTELIANAE.

110. *PATAETA CARBO*, Gn.

A single specimen, in March.

111. *PATAETA CONSPICIENDA*, Wlk.

Taken at rare intervals during March and April.

Subfamily ACONTIANAE.

112. *EARIAS HUEGELI*, Rogenh.

Fourteen specimens, March to May.

113. *EARIAS PARALLELA*, Lucas.

One of the commonest species in September and October, and again in March.

114. *EARIAS OCHROPHYLLA*, Turn.

Also very common during September, October, and November, and again in March and April.

115. *ARMACTICA CONCHIDIA*, Butl.

Taken occasionally in February and March. The sexes are somewhat dissimilar.

Subfamily CATOCALINAE.

116. *NIGUZA HABROSCOPA*, n. sp.

♂, 42 mm. Head, palpi, antennae, and thorax smoky-brown, thorax with an anterior snow-white band. Abdomen reddish-orange, with blackish segmental bands on basal half and with blackish lateral tufts; beneath ochreous with whitish segmental bands. Legs dark-fuscous, middle and posterior tarsi spotted with ochreous. Forewings elongate-triangular, termen rounded, slightly waved; smoky-brown with snow-white markings; two orange basal spots, on costa and submedian fold; a moderately broad transverse fascia, from costa at one-fifth to dorsum at about one-quarter, curved obliquely outwards on upper third, and below middle, and with a rounded projection outwards in middle, which contains an elongate streak of groundcolour; a similar fascia, from costa at five-sixths to dorsum before anal angle, curved obliquely outwards on upper third, thence obliquely inwards to termination, from the anterior edge of the fascia spring two snow-white circular lines encircling the large discoidal ocellus, which is metallic-purple, surrounded completely with lines of orange and black respectively, and containing a fine streak of orange from posterior edge above middle; beyond the second transverse fascia is a narrow metallic-purple somewhat interrupted line throughout; this is followed by a parallel series of orange triangular moderate spots, upper three becoming ferruginous, this is again followed by a parallel series of moderately large snow-white triangular spots, their apices directed inwards; a fine waved fuscous subterminal line, followed by a thick parallel shade of grey-whitish throughout, except at tornus, where it is white; a fuscous waved line

along termen; cilia light-fuscous. Hindwings with termen rounded; snow-white; a large, somewhat quadrate discal spot; subterminal metallic line and orange and white triangular spots as in forewings, but the orange spots are the largest, and white small, being the reverse of those on forewings; submarginal and line along termen as in forewings; cilia as in forewings.

Allied to *anisogramma*, Low., but apart from the larger size, two transverse oblique fasciae, besides other details, are sufficient to ensure its distinctiveness. It is a very beautiful and striking insect.

One specimen, at light, in March.

117. NIGUZA ANISOGRAMMA, Low.

Two specimens, at light, in November.

118. GRAMMODES OCELLATA, Tepp.

Taken occasionally in March and April, usually at light. The specimens are much larger than those taken at Adelaide.

119. GRAMMODES OCULICOLA, Walk.

Five specimens, taken in April.

120. GRAMMODES PULCHERRIMA, Lucas.

Taken occasionally in March.

121. MOCIS ALTERNA, Wlk.

Taken at rare intervals during November and December.

122. DONUCA SPECTABILIS, Wlk.

Taken occasionally, at rest on *Eucalyptus* trunks, in March and October.

123. ANUA PARCEMACULA, Lucas.

Two specimens, in March, beaten from *Eucalyptus*.

124. ANUA TIRHACA, Cram.

I have bred this species (the var. *separans*, Walk., xiv., 1357) from a larva feeding on "pepper tree" (*Schinus molle*), and as that tree is superabundant here, the insect may possibly in due course become common. I have also taken two specimens in March, at which period the imago emerged.

125. ACHAEA JANATA, Linn.

Four specimens, taken between October and March, all probably belonging to the var. *argilla*, Swin. I have also received two specimens of the same type from Alice Springs, Central South Australia. The insect has been known for many years as *melicerta*, Dru., but the Linnean name has priority.

Subfamily PHYTOMETRINAE.

126. PHYTOMETRA CHALCYTES, Esp.

Taken occasionally in October and November.

127. PHYTOMETRA ARGENTIFERA, Gn.

Common in August and November, and again in March.

128. PHYTOMETRA SUBSIDENS, Wlk.

Three specimens, in March.

Subfamily NOCTUINAE.

129. POLYDESMA SUBMURINA, Wlk.

Taken occasionally at light during October and November.

130. POLYDESMA LAWSONI, Feld.

Very common in October and November.

131. POLYDESMA IGNEIPICTA, Low.

Not uncommon in February and March.

132. POLYDESMA AGLOSSOIDES, Gn.

Rather scarce. Taken during March. It is generally larger and paler than the preceding species, but otherwise very closely allied.

133. DASYPODIA SELENOPHORA, Gn.

Not uncommon, generally taken in the house, preferring shady spots, in November and March.

134. TATHORHYNCUS EXSICCATA, Led.

Common in November, March, and April.

135. SANDAVA XYLISTIS, Swin.

Not uncommon during March.

136. CALATHUSA ISCHNODES, Turn.

Fairly common at light, March to May. Turner describes the hindwings as "fuscous, towards base suffused with whitish"; this is probably correct. Hampson (Cat. Lep. Phal., xi., p. 380, pl. clxxxiv., fig. 12) describes them as "pale purplish-red," whilst his figure (which is indifferent) shows them clear ochreous.

137. CALATHUSA HEMISCIA, n. sp.

♀, 28 mm. Head blackish. Palpi and antennae fuscous. Thorax fuscous, thickly irrorated with white, patagia white.

Abdomen ochreous-fuscous. Legs fuscous, posterior pair mixed with grey-whitish. Forewings elongate, costa gently arched, termen obliquely rounded; ashy-grey-whitish, upper half of wing throughout blackish, separation rather sharply defined; antemedian line hardly traceable; orbicular and reniform not traceable; postmedian line perceptible from below lower edge of to dorsum, with a rounded projection to submedian fold, thence oblique; subterminal line fuscous, very faint, only perceptible on veins; a row of interneural black spots along termen, sometimes obsolete; cilia greyish-fuscous, chequered with dark-fuscous. Hindwings with termen faintly sinuate, fuscous, becoming ochreous on basal two-thirds; cilia grey-whitish, with a fuscous median line.

Closely allied to *ischnodes*, Turn., but apparently distinct.

One specimen, in March; also from near Dalby, Queensland.

138. *CALATHUSA THERMOSTICHA*, n. sp.

♂, ♀; 26, 30 mm. Head, palpi, antenna, and thorax cinerous-grey. Abdomen greyish-ochreous, whitish beneath. Legs cinerous-grey, posterior pair whitish. Forewings shaped as in *hemiscia*; cinerous-grey; a strongly-marked black longitudinal streak above middle of wing, from base to termen; all veins neatly outlined with black; all other markings obsolete, with the exception of three or four suffused black interneural dots along lower half of termen; cilia cinerous-grey, with black streaks at extremities of veins. Hindwings with termen slightly sinuate; greyish-ochreous in male, dull-ochreous in female; both with a moderately broad fuscous apical patch, continued along termen to beyond middle; cilia grey-whitish in male, ochreous in female.

Two specimens, in March and April; also from Semaphore and Pinnaroo, South Australia.

139. *CALATHUSA AETHALISTIS*, n. sp.

♀, 28 mm. Head, palpi, antenna, and thorax smoky-fuscous. Abdomen dull ochreous-fuscous. Legs cinerous-grey, posterior coxae ochreous tinged. Forewings shaped as in *hemiscia*, but termen less rounded; smoky-fuscous; an obscure somewhat darker median shade, anterior edge from beyond one-quarter costa to one-third dorsum; posterior edge from beyond middle of costa to middle of dorsum, with a strongly-rounded projection in middle, on which are four or five raised tufts of fuscous scales; faint indications of a few fuscous spots along termen; cilia light-fuscous. Hindwings with termen faintly sinuate above middle; dull-ochreous,

mixed with light fuscous on terminal half; cilia greyish-ochreous. Forewings beneath light-fuscous, hindwings clear yellow.

One specimen, in April, at light.

140. *PROROCOPIS MELANOCHORDA*, Meyr.

Two specimens, in May; also from Derby, Western Australia, and Duaringa, Queensland. The hindwings of the Derby specimen are much whiter than those from Broken Hill and Duaringa.

141. *PROROCOPIS HYPOXANTHA*, Low.

Two specimens, in December.

142. *PROROCOPIS EUXANTHA*, Low.

Three specimens, in January and March; also from Birchip, Victoria, and Brisbane, Queensland. I also possess a specimen from Northampton, Western Australia, which may probably be this species, but is too poor for identification.

143. *PROROCOPIS STENOTA*, Low.

Three specimens, in October.

144. *PROROCOPIS ADELOPIS*, Low.

Four specimens, in October; also from Derby, Western Australia. In this specimen the hindwings are nearly white, and markings of forewings obscure.

145. *PROROCOPIS LEUCOCROSSA*, Low.

One specimen (type), in October.

146. *PROROCOPIS SYMMOPA*, n. sp.

♀, 25-28 mm. Head, palpi, antennae, and thorax ashy-grey-fuscous. Abdomen ochreous-fuscous, legs ochreous-white, tibiae and tarsi infuscated. Forewings elongate, costa rather strongly arched, termen rounded, hardly waved; cinerous-grey, thickly irrorated with fuscous and dark-fuscous; markings narrow, black; sub-basal line curved outwards, reaching submedian fold; ante-median line dentate, with a short acute projection outwards below costa; postmedian line with a moderately outwards curved projection above middle, slightly indented in centre, gently curved inwards to dorsum; subterminal line crenulate, indented above and below middle, and preceded by its own width by a dull-whitish shade; a row of small black dots, well before termen; a fine waved black line along termen; cilia ashy-grey fuscous. Hindwings with termen hardly

waved; dull-ochreous, finely irrorated with fuscous on terminal half; cilia greyish-ochreous.

Allied to preceding species, but lines are arranged differently.

One specimen, in March; also from near Duaringa, Queensland.

147. *PROCONIS EULOPHA*, Low.

Proconis eulopha, Low., *ante*, 1903, p. 44.

Two specimens, in May.

Additional Noctuidae.

148. *PERIGEA CONFUNDENS*, Wlk.

Taken occasionally at light, March to May.

149. *ARIATHISA CONFINIS*, Wlk.

Several specimens, in August, September, and October.

150. *ARIATHISA ADELOPA*, Low.

Ariathisa adelopa, Hmps., *Cat. Lep. Phal.*, viii., p. 407, pl. cxxxii., fig. 23 (1909).

♂, 42 mm. Head and thorax greyish-fuscous, palpi and antennae reddish-fuscous. Abdomen greyish-fuscous. Legs ochreous, mixed with fuscous, tarsi banded with black. Forewings elongate, costa hardly arched, termen obliquely rounded; greyish-fuscous, thickly and minutely irrorated with black, terminal area somewhat darker; sub-basal line indistinct, only visible on costa as a black dot, antemedial line obscure, blackish, oblique, waved, angled outwards at submedian fold; reniform lunular, blackish, with a rufous lunule on its anterior edge, placed on indistinct waved median line, which is oblique from costa to lower angle of cell; postmedian line obscure, waved, outwardly bent below costa, twice incurved on lower half; subterminal obscure, slightly angled outwards at vein seven; a terminal series of indistinct striae; cilia dark-fuscous. Hindwings with termen rounded; dark-fuscous; underside grey, costal area irrorated with black; a small fuscous lunular mark in disc; terminal area blackish, becoming deeper towards apex; cilia fuscous. Abdomen with large exsertible lateral tufts.

Gisborne, Victoria, one specimen ([?] March).

151. *ARIATHISA HETEROGAMA*, Low.

Ariathisa heterogama, Hmps., *Cat. Lep. Phal.*, viii., p. 404, pl. cxxxii., fig. 17 (1909).

♂, ♀; 34, 38 mm. Head and thorax whitish, irrorated with reddish-fuscous, palpi dark-fuscous at base, tegulae with the basal half blackish. Abdomen and legs ochreous-white,

abdomen whitish beneath; tarsi with blackish rings. Forewings elongate, costa hardly arched; termen rounded, oblique: reddish-ochreous, irrorated with fuscous and dark-fuscous; sub-basal line only represented as black striae from costa and cell; antemedian line black, oblique, undulated; orbicular an obscure minute reddish spot; reniform small, lunulate, edged with brownish on inner side; median line obscure, oblique, from costa to median nervure, thence sinuous; postmedian line obscure, blackish, bent outwards beneath costa, thence dentate, incurved below vein four and angled outwards on submedian fold; some pale points beyond it on costa; subterminal line obscure, anteriorly suffused with dark-fuscous; sinuate outwards on vein seven, thence dentate, oblique; a series of black points along termen; cilia greyish-fuscous, with a pale line at base. Hindwings white, somewhat infuscated on veins and towards apex; cilia grey-whitish.

The female has the head, thorax, and forewings more whitish, and hindwings paler.

Rather common during March, April, and May.

GEOMETRINA.

This group is tolerably well represented in the district, the *Selidosemidae* being most numerous. The *Hydriomenidae* are disappointing, being less than a score; and as the genus *Hydriomena* embraces probably 200 species in Australia, it is improbable that this district will materially add to the number. As will be seen the other families of the group, with the exception of the *Sterrhidae*, have representatives, but to no great extent.

Subfamily HYDRIOMENINAE.

152. PASIPHILA FILATA, Gn.

Taken occasionally in October and November.

153. PHRISSOGONUS LATICOSTATUS, Wlk.

Rather common during August, October, and November.

154. ASTHENA PULCHRARIA, Dbld.

Three specimens, in February and May, at light.

155. HYDRIOMENA MECYNATA, Gn.

Very scarce here, three specimens in December.

156. HYDRIOMENA UNCINATA, Gn.

Taken occasionally in October and December.

157. *HYDRIOMENA SUBOCHRARIA*, Dbl.

Not uncommon, January to March.

158. *HYDRIOMENA CRYEROPA*, Meyr.

Not uncommon in certain localities in October.

159. *HYDRIOMENA ACTINIPHA*, Low.

Five specimens, in March.

160. *HYDRIOMENA PENTODONTA*, n. sp.

♂, ♀; 22, 24 mm. Head, palpi, antennae, thorax, and abdomen fuscous, fillet with a small ferruginous spot; palpi two: antennal ciliations half. Abdomen with blackish segmental bands. Legs fuscous-whitish, tibiae and tarsi ringed with whitish. Forewings triangular, termen waved, hardly bowed, oblique; rather dark-fuscous, crossed by numerous fine blackish lines, and with veins more or less streaked with ferruginous, especially towards termen; anterior edge of basal patch slightly curved, from costa one-sixth to dorsum at about one-fourth; anterior edge of median irregularly and finely dentate, gently and evenly curved inwards, from before one-third of costa to one-third dorsum; a blackish discal dot; posterior edge of median band from three-fourths to before two-thirds dorsum, with five rather sharp projections, one below costa, two contiguous in middle, upper one longest, and two others just above dorsal, abbreviated; space between basal patch and anterior edge of median, and between posterior edge and subterminal line snow-white; subterminal suffused, interrupted, waved, more pronounced on veins, where it becomes dot-like; an inwardly oblique streak of fuscous from below apex towards middle of subterminal; a waved black line along termen; cilia whitish, barred with fuscous at extremities of veins. Hindwings with termen waved; rounded; fuscous; three finely-waved transverse lines, corresponding to lines of median patch of forewings; subterminal line rather thick, waved; preceded by its own width of dull-greyish; line along termen and cilia as in forewings.

Two specimens, in April.

161. *HYDRIOMENA SUBRECTARIA*, Gn.

Five specimens, in November; one specimen from Milperinka.

162. *HYDRIOMENA IMPERVIATA*, Wlk.

Ten specimens, during March and May.

163. *HYPYCNOA DELOTIS*, Low.

Three specimens, in April and May.

164. XANTHORHOE PARADELPHA, Low.

Five specimens, in March.

165. XANTHORHOE SUBIDARIA, Gn.

Taken frequently at light, in March and April. I have taken but a single specimen of the var. *urbana*, Meyr.

166. XANTHORHOE HYPERYTHRA, Low.

Several specimens, in March.

Subfamily MONOCTENIANAE.

167. TAXEOTIS EXSECTARIA, Wlk.

Taken occasionally at light, in October.

168. TAXEOTIS DELOGRAMMA, Meyr.

Tolerably common in the hills near the town in December.

169. TAXEOTIS INTEXTATA, Gn.

Seven specimens, all females, in September.

170. TAXEOTIS XANTHOGRAMMA, Low.

Not common, occasionally met with in September and October.

171. TAXEOTIS PHAEOPA, Low.

Taken occasionally in May and June.

172. DICERATUCHA XENOPIS, Low.

Rather common during the winter months, very sluggish, and generally taken at light.

173. DARANTASIA ⁽¹⁾ PERICHROA, Low.

Not uncommon in September and October.

DICHROMODES, Gn.

It is a curious fact that, although this genus is predominant in this family, I have not succeeded in discovering a single individual in this locality, though I have made diligent search.

Subfamily GEOMETRINAE.

174. EOIS ALBICOSTATA, Wlk.

Taken occasionally in March.

(1) As Hampson (Cat. Lep. Phal., ii., p. 271, 1900) employs the name *Darantasia* for a genus of *Arctiadae*, with *cuneiplena*, Wlk., as the type, it may prove necessary to erect a new genus to receive *perichroa*.

175. *EOIS STENOZONA*, Low.

One specimen (type), in September.

176. *LEPTOMERIS LYDIA*, Butl.

Very common from October to March.

177. *LEPTOMERIS RUBRARIA*, Dbld.

Rather common from August to March.

178. *LEPTOMERIS HYPOCHRA*, Meyr.

Three (poor) specimens from Yancannia, without date.

179. *LEPTOMERIS OPTIVATA*, Wlk.

Common in August and November; not observed during the summer, *i.e.*, December to March.

180. *PYLARGE EPISCIA*, Meyr.

Not uncommon in September and October. Somewhat variable in depth of colouring, some specimens being almost clay coloured.

181. *EMMILTIS TRISSODESMA*, Low.

Not uncommon March to April, also June and October. The sexes are markedly dissimilar.

182. *EMMILTIS COSMADELPHA*, Low.

Taken occasionally during April, also in September and October, usually at light. This species is subject to some slight variation in the hindwings of both sexes, those of the male being occasionally deep yellow, and in the female pale-yellow, thickly irrorated with fuscous.

183. *EMMILTIS* (?) *ARGILLINA*, n. sp.

♂, 18 mm. Head, palpi, antennae, and thorax fuscous, palpi long, porrected, second joint densely haired beneath. Antennae annulated with white, shortly serrate(?); thorax posteriorly ochreous, patagia ochreous. Abdomen fuscous, segmental margins obscurely whitish. Legs whitish, irrorated with fuscous. Forewings elongate, triangular, termen rounded, oblique; ochreous-fuscous; an ochreous basal patch, outer edge curved from costa at one-quarter to about one-third dorsum; a slightly outwards curved, moderate, dull orange transverse fascia, edged on either side by fine black somewhat waved line, anterior edge separated from basal patch by a narrow line of white throughout; a similar, but duller orange transverse fascia, from costa at two-thirds to dorsum before anal angle, slightly angled outwardly below

costa, and faintly sinuate above and below middle; a fuscous-ochreous rather broad transverse fascia immediately beyond second fascia, and only separated by a fine line of white throughout; the fascia is strongly indented above and below middle and followed throughout by a well-marked narrow parallel line; a fine blackish interrupted line along termen, preceded by minute white spots; cilia fuscous-ochreous, terminal half barred with white, a fine blackish median line throughout. Hindwings with termen rounded; dull whitish, thickly overlaid with fuscous; two waved, whitish, transverse parallel lines, anterior from costa at three-fifths to just above anal angle, second line more obscure; cilia as in forewings, but white bars less pronounced.

One specimen, in March, at light.

I am not satisfied with the position of this species, and I much doubt whether it is an *Emmiltis*. The palpi and antennae appear to suggest a new genus, but I consider my material insufficient to erect one at present.

184. *EUCHLORIS VERTUMNARIA*, Gn.

Two specimens, in May.

185. *EUCHLORIS ALBICOSTA*, Wlk.

Five specimens, in March.

186. *HYPOCHROMA OCCULTARIA*, Don.

Rather scarce here; two specimens, November and December.

187. *PSEUDOTERPNA ARGYRASPIS*, Low.

Two specimens, beaten from *Eucalyptus*, in March.

188. *XENOCHLAENA PORPHYROPA*, Low.

The type, taken in October, is still unique. The name is misprinted *porphyropis*. *Ante*, 1903, p. 192.

Subfamily SELIDOSEMIDAE.

189. *OSTEODES PROCURATA*, Wlk.

Two specimens, in October.

190. *COSYMBIA* ⁽²⁾ *PENTHEARIA*, Gn.

Four specimens, at light, in November.

(2) Mr. Meyrick, in 1891, surmised that probably this genus extended right across the interior of Australia, from east to west, without touching the coast, and my experience tends to support the theory.

191. SCIOGLYPTIS TRISYNEURA, Low.

One female specimen (which in markings is similar to the male), taken in October. The type came from Arltunga, South Australia, and was taken in November.

192. SELIDOSEMA SUASARIA, Gn.

Taken occasionally in March.

193. SELIDOSEMA EXCURSARIA, Gn.

Tolerably common in May and June.

194. SELIDOSEMA ACACIARIA, Bdv.

I have two specimens, probably referable to this species, taken in October and November.

195. SELIDOSEMA ARGOPLACA, Meyr.

Two specimens, beaten from *Eucalyptus*, in October.

196. SELIDOSEMA DIAGRAMMA, Low.

Two specimens, in April.

197. HYBERNIA INDOCILIS, Latr.

Rather common locally. Larvae (undescribed) feed on *Chrysanthemum*, *Clematis*, and *Muehlenbeckia*, and the imagoes emerge from July to March.

198. ECTROPIS PRISTIS, Meyr.

Four specimens, April and August.

199. ECTROPIS PLECTRONEURA, Low.

Four specimens, April and August.

200. ECTROPIS HIEROGLYPHICA, Low.

One specimen (type), in October, 1900.

201. PACHYTYLA DOLIOPA, Low.

One specimen (type), in June.

202. PAUROCOMA MOLYBDINA, Low.

Five specimens, April and May.

ANGELIA, Low.

This is the predominant genus of the family in this district, and is destined to be increased; indeed, I possess two additional species which are probably new, but too poor to describe.

203. ANGELIA TEPHROCHROA, Low.

Five specimens, April and May.

204. ANGELIA PLATYDESMA, Low.

Several specimens, April and May.

205. ANGELIA HETEROPA, Low.

Not uncommon in April, May, and June.

206. ANGELIA CALLISARCA, Low.

One specimen (type), April, 1902.

207. ANGELIA CRYPSIGRAMMA, Low.

Nine specimens, March and April.

208. ANGELIA EURYPSAMMA, n. sp.

♂, ♀; 25-32 mm. Head, palpi, and thorax ochreous. Antennae ochreous-whitish, pectinations fuscous, at greatest length about six. Abdomen ochreous-grey. Legs whitish-ochreous, anterior pair infuscated. Forewings elongate-triangular; costa gently arched; termen bowed, oblique; pale-ochreous, in female minutely, sparsely, and irregularly irrorated with blackish; costal edge narrowly dark-ochreous throughout; a thick black elongate streak in cell on lower edge throughout, continued at posterior extremity to upper edge of cell, finely edged throughout on lower edge by a line of whitish-ochreous, which is continued to base of wing; a short, thick, black, elongate streak lying between vein one and lower edge of cell, from near base to slightly beyond anterior edge of first black streak; a similarly thick black dentate line at two-thirds from base, commencing on vein one and continued obliquely to vein seven, strongly bidentate outwards in middle, suffusedly edged anteriorly with narrow shade of light fuscous; cilia pale-ochreous. Hindwings with termen rounded; greyish-white, tinged with light fuscous on terminal half of wing; a moderately large fuscous discal spot; traces of a faint fuscous waved submedian line; cilia ochreous-grey, mixed with fuscous at base.

Closely allied to the following, which in turn is allied to *cryptogramma*, Low.

Four specimens, in April.

209. ANGELIA PHILOCOSMA, n. sp.

♂, ♀; 25-30 mm. Head and palpi fuscous. Thorax ashy-grey-whitish, in female mixed with reddish-fuscous. Antennae whitish, pectinations light fuscous, at greatest length six. Abdomen grey-whitish in male; ochreous in female. Legs grey-whitish, anterior pair fuscous tinged. Forewings shaped as in *eurypsamma*; in male ashy-grey-whitish, sparsely irrorated with minute black dots, in female

thickly irrorated with reddish-fuscous; markings black; a moderately thick streak from base, continued along vein one to before middle; an elongate, rather thick streak in cell, resting on lower edge to extremity and then continued to upper edge indicating discal spot, narrowly edged throughout below by a streak of light ochreous; a thick dentate streak from dorsum to vein seven, outwardly oblique, and strongly bidentate in middle, bidentation less pronounced in female; a very fine fuscous outwards curved line from one-sixth costa to anterior edge of cellular streak, hardly traceable in female; groundcolour of male between this and dentate oblique streak wholly reddish-fuscous, except a thick streak of groundcolour along costa; in female the dentate oblique streak is preceded by a tolerably thick reddish-fuscous shade; a row of blackish interneural spots along termen, absent in male; cilia greyish-ochreous, chequered with fuscous bars in female. Hindwings with termen rounded; grey, thickly irrorated with fuscous, lighter on basal half; a moderately large fuscous discal spot; a moderately thick waved submedian line, hardly discernible in female; cilia grey-whitish.

The male has a close resemblance to *platydesma*, Low., but the markings are differently arranged.

Three specimens, in May.

210. *ANGELIA HAPLOCHROA*, n. sp.

♂, ♀; 25-30 mm. Head, palpi, and thorax grey-whitish, fuscous tinged in male. Antennae light fuscous, pectinations four. Abdomen greyish-ochreous. Legs fuscous-whitish. Forewings elongate, triangular, termen gently bowed, oblique; pale grey-whitish, ochreous tinged in male; an outwardly curved series of three reddish-ferruginous dots, from below costa at one-quarter to just above dorsum at one-quarter; a similarly coloured series of dots, from costa about three-quarters to just before anal angle, gently curved outwards on upper two-thirds; cilia greyish-ochreous. Hindwings with termen faintly waved, rounded; greyish-fuscous, darker on terminal half; a moderately large fuscous discal dot; cilia grey-whitish.

Two specimens, in May.

211. *ANGELIA STENOSCIA*, n. sp.

♀, 26 mm. Head, palpi, and thorax greyish-ochreous. Antennae broken. Abdomen grey-whitish. Legs greyish. Forewings elongate, triangular, termen gently bowed, oblique; grey-whitish, very sparsely sprinkled with light fuscous; an outwardly curved reddish-fuscous narrow line from below costa at one-quarter to dorsum at one-third; a

similarly coloured line, finely waved throughout, and accompanied on its posterior edge by a line of whitish-ochreous of similar width throughout; a large quadrate fuscous discal spot; an indistinct row of fine black points before termen; cilia grey-whitish. Hindwings with termen faintly waved; greyish-fuscous, much darker on terminal half; a moderate fuscous discal spot; cilia grey-whitish.

One specimen, in May.

212. *AMELORA POLYCHROA*, Low.

One specimen, in December. The type came from Dundas, Western Australia.

213. *PARAMELORA ZOPHODESMA*, Low.

Four specimens, May and October.

214. *PARAMELORA LYCHNOTA*, Low.

Five specimens, April, May, and October, probably attached to *Eucalyptus*.

215. *THALAINODES TETRACLADA*, Low.

One specimen (type), in May, 1900.

216. *THALAINODES PARONYCHA*, Low.

Not uncommon during April and May.

217. *THALAINODES ALLOCHROA*, Low.

Several specimens, during April and May. The male does not differ from the female in appearance, excepting the bipectinated antennae, the pectinations being four.

218. *AMPHICROSSA HEMADELPHA*, Low.

Several examples, April to June.

219. *CHLENIAS ARIETARIA*, Gn.

Very common at street lamps, April and May.

220. *CHLENIAS HETEROMORPHA*, Low.

Common during April, May, and June.

221. *CHLENIAS SERINA*, Low.

Several specimens, April and May.

222. *CHLENIAS MELANOXYSTA*, Meyr.

Taken occasionally, during April and May.

223. *CHLENIAS BANKSIARIA*, Le Guill.

Three specimens, in May.